Space Weather Forecast

Issued on Thursday, 04 July 2024 at 01:22 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of Moderate-class flares throughout.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Moderate, with a Moderate flare at 03/0741 UTC. This was from a very small and simple region, yet it has been responsible for two Moderate-class flares in the last few days. There are now ten sunspot regions on the disc, the majority of which are small and simple. The spot in the south near centre disc is currently the largest and longest spot, with moderate magnetic complexity. To the north, a spot continued to grow though with no recent classification change. All other regions are simple and stable at present.

No Earth directed coronal mass ejections have been observed in imagery during the past 24 hours.

Solar Wind / Geomagnetic Activity: Solar winds were at background. Wind speeds were slow-ambient. The Interplanetary Magnetic Field was weak throughout. The north-south component varied weakly. Geomagnetic activity was Quiet (Kp 1-2).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) has remained at background levels with no solar radiation storms occurring.

Four-Day Space Weather Forecast Summary

Solar Activity: Low activity is most likely, with a chance of further isolated Moderate-class flares.

Solar Wind / Geomagnetic Activity: There remains a slight chance of a late arrival of a coronal mass ejection from 29 Jun. No further Earth directed coronal mass ejections feature in the forecast. Solar winds speeds are expected to be slow-ambient to slightly elevated through much of the period. There is a slight chance of a coronal hole high speed stream to arrive, potentially bringing slightly elevated or perhaps elevated wind speeds either late day 3 or early day 4 (6 or 7 Jul).

Geomagnetic activity is expected to be generally Quiet to Unsettled (Kp 0-3), with a slight chance of G1/Minor storm (Kp 5) intervals each day from either weak coronal mass ejection or high speed stream arrivals.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is most likely to remain at background levels.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	20	5	10	10
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	40	40	40	40
Very Active	R3 to R5 X	No	5	5	5	5

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	5	5	5
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

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